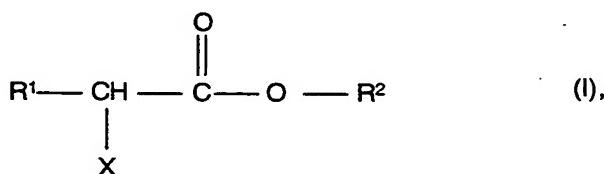


New claims:

1. A process for preparing optically active 2-amino-, 2-chloro-,
 5 2-hydroxy- or 2-alkoxy-1-alkanols by catalytically
 hydrogenating appropriate optically active 2-amino-,
 2-chloro-, 2-hydroxy- and 2-alkoxycarboxylic acids or their
 acid derivatives, which comprises carrying out the
 10 hydrogenation in the presence of catalysts comprising
 palladium and rhenium or platinum and rhenium.
2. A process as claimed in claim 1, wherein optically active
 15 2-amino-, 2-chloro-, 2-hydroxy- or 2-alkoxycarboxylic acids
 or their esters of the formula I



where the radicals are defined as follows:

- R¹: straight-chain or branched C₁-C₁₂-alkyl,
 25 C₇-C₁₂-aralkyl or C₆-C₁₀-aryl, each of which may be
 substituted by NR³R⁴, OH, COOH and/or further groups
 stable under the reaction conditions,
- R²: hydrogen, straight-chain or branched C₁-C₁₂-alkyl or
 30 C₃-C₈-cycloalkyl,
- X: chlorine, NR⁵R⁶ or OR⁷,
- R³, R⁴, R⁵ and R⁶:
 35 each independently hydrogen, straight-chain or branched
 C₁-C₁₂-alkyl, C₇-C₁₂-aralkyl, C₆-C₁₀-aryl, C₃-C₈-cycloalkyl
 or C₃-C₈-cycloalkyl in which one CH₂ group is replaced by
 O or NR⁸,
- R³ and R⁴ and also R⁵ and R⁶:
 40 also each independently together -(CH₂)_m-, where m is an
 integer from 4 to 7,
- R¹ and R⁵:
 45 also together -(CH₂)_n- where n is an integer from 2 to 6,

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R⁷: hydrogen, straight-chain or branched C₁-C₁₂-alkyl or C₃-C₈-cycloalkyl,

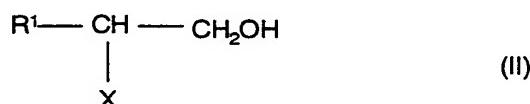
R¹ and R⁷:

5 also together -(CH₂)_n-, where n is an integer from 2 to 6 and

R⁸: hydrogen, straight-chain or branched C₁-C₁₂-alkyl,
C₇-C₁₂-aralkyl or C₆-C₁₀-aryl,

10 or their acid anhydrides are used and hydrogenated to the corresponding optically active alcohols of the formula II

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in which R¹ and X are each as defined above.

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- 3. A process as claimed in claims 1 and 2, wherein the palladium/rhenium or platinum/rhenium catalysts comprise at least one element from the group of the elements titanium, vanadium, chromium, manganese, iron, cobalt, nickel, copper, zinc, zirconium, molybdenum, silver, tin, tungsten, lead, lanthanum and cerium.
- 25
- 4. A process as claimed in claims 1 and 2, wherein the palladium/rhenium or platinum/rhenium catalysts comprise at least one element from the group of the elements silver, molybdenum, tungsten and tin.
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- 5. A process as claimed in any of claims 1 to 4, wherein the palladium/rhenium or platinum/rhenium catalysts are used unsupported or applied to a support.
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- 6. A process as claimed in any of claims 1 to 5, wherein the weight ratio of the elements palladium or platinum to rhenium is from 100:1 to 0.01:1.
- 40
- 7. A process as claimed in any of claims 1 to 6, wherein the weight ratio of the elements palladium or platinum to rhenium is from 50:1 to 0.05:1.

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8. A process as claimed in any of claims 1 to 7, wherein the weight ratio of the elements palladium or platinum to the at least one further element of the catalyst is from 100:1 to 10:1.

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9. A process as claimed in any of claims 1 to 8, wherein the hydrogenation is carried out in the presence of an acid.

10. A process as claimed in any of claims 1 to 9, wherein the hydrogenation is carried out at a temperature of from 30 to 140°C.

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